

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

**ERICSSON INC., AND
TELEFONAKTIEBOLAGET LM ERICSSON,**

Plaintiff,

v.

**TCL COMMUNICATION TECHNOLOGY
HOLDINGS, LTD., TCT MOBILE LIMITED,
AND TCT MOBILE (US), INC.,**

Defendant.

Civil Action No. 2:15-cv-00011-RSP

JURY TRIAL

PLAINTIFFS' OPENING CLAIM CONSTRUCTION BRIEF

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I. INTRODUCTION

Pursuant to P.R. 4-5(a), Plaintiffs Ericsson Inc. and Telefonaktiebolaget LM Ericsson (jointly, “Ericsson”) respectfully submit this Opening Claim Construction Brief regarding U.S. Patent No. 7,149,510 (“the ’510 patent”), U.S. Patent No. 6,029,052 (“the ’052 patent”), U.S. Patent No. 6,418,310 (“the ’310 patent”), U.S. Patent No. RE 43,931 (“the ’931 patent”), and U.S. Patent No. 6,535,815 (“the ’815 patent”) (the “patents-in-suit”). The patents-in-suit relate to technologies developed by Ericsson to improve the operation of cellular telephones.¹ The parties dispute the meaning of sixteen groups of claim terms distributed across all five of the patents-in-suit.

This brief provides a short introduction to each patent-in-suit, followed by an explanation of why the Court should adopt each of Ericsson’s proposed constructions related to that patent. Ericsson proposes constructions for the disputed terms in accordance with long-established principles of claim construction—giving a claim term the full breadth of its ordinary meaning that one of ordinary skill in the art, at the time of the invention and in light of the patent’s specification and prosecution history, would have given it. *See TomTom, Inc. v. Adolph*, 2015 U.S. App. LEXIS 10328, at *26 (Fed. Cir. June 19, 2015). Because the Court is familiar with the law of claim construction, Ericsson will discuss specific claim construction principles only where applicable to the facts of the disputed claim terms.

¹ Ericsson submitted a technology tutorial contemporaneously with this Opening Claim Construction Brief. For a detailed overview of the background of each of the patents-in-suit, Ericsson refers the Court to that tutorial.

II. DISPUTED CLAIM TERMS FOR THE '510 PATENT

a. Overview of the Technology

The '510 patent teaches a system for controlling access to the software and hardware in a mobile terminal. When the inventors filed their provisional application in 2002, most cell-phones came with all software preloaded. Apple's App Store and Android's Google Play store did not yet exist, but the inventors recognized that the cell-phone software market would eventually be dominated by downloadable third-party applications. The inventors also recognized that downloading these third-party applications presented a security risk to the software and hardware on the user's cellphone. The inventors thus invented a platform consisting of a software services component, "a plurality of well-structured functional software units for providing services that are offered to users," a hardware component, "a set of hardware units that are associated with and controlled by their respective functional software stacks," and an interface component that controls access to the software and hardware components. '510 patent at 4:19-41. The interface component allows a user to set permission policies that limit the ability of downloaded applications to access underlying hardware and their associated services, such as whether a particular third-party application can access the user's location or microphone.

b. "software services component"

Ericsson's Proposal	TCL's Proposal
a software component that includes a plurality of functional software units that each provides services to a user	a software component allowing applications to provide services to a user
Claims 1-5 and 7-11 of the '510 patent.	

The term "software services component" should be construed as "a software component that includes a plurality of functional software units that each provides services to a user."

Consistent with Ericsson's construction, the specification unambiguously requires the software services component to include a plurality of software units that each provides services to a user. The specification explains that each of the software units is associated with a respective hardware unit, as depicted Figure 1 below (with highlighting added).

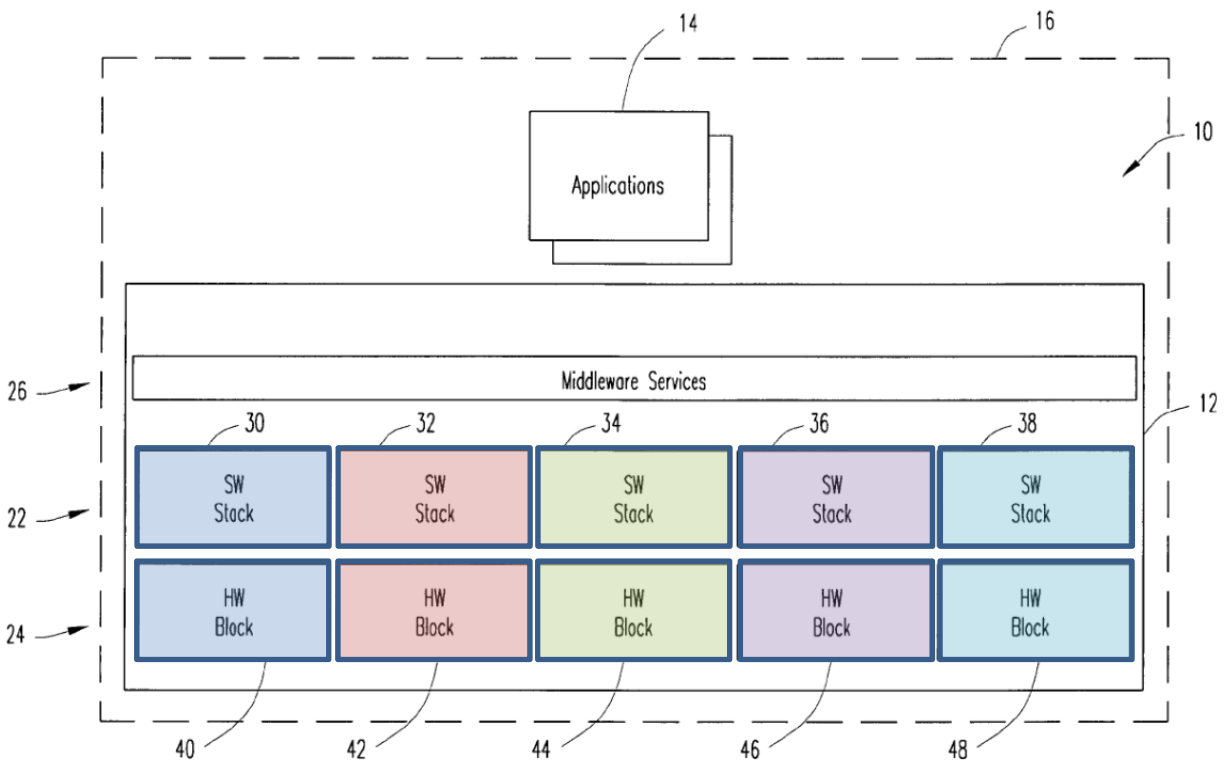


FIG. 1

'510 patent at fig. 1 (emphasis added); *see also id.* at 4:19-32 (providing that the software services component includes a “**plurality of well-structured software units for providing services** that are offered to users” and the hardware component includes “**a set of hardware units** that are associated with and controlled by their respective **software stacks.**”) (emphasis added); *Id.* at 4:67-5:2 (The software stacks 30-38 of software component 22 each include hardware driver software 60-68 to operate the hardware units associated with each stack.”).

TCL's construction incorrectly reads out the requirement that the software services component include a "plurality of functional software units." The inventors intended to provide an organization to the software that is "easy to understand so that it can be more easily designed and more easily upgraded or otherwise modified." *Id.* at 5:5-10. Accordingly, the patentee incorporated by reference U.S. patent application Ser. No. 10/359,835, disclosing "software stacks 30-38 of software services component 22 and their associated hardware units 40-48 define functional stacks that are structured into manageable pieces (software modules and hardware blocks) *having clearly defined functionality and interfaces.*" Exhibit 3 at 3:65-4:2 (emphasis added). Designing a system that utilizes a single software unit to communicate with all hardware units would therefore counter the very principles upon which the present invention was built. Importantly, a person having ordinary skill in the art would have readily understood the disclosed "software services component" to include a "plurality of functional software units." *See* Exhibit 1 at ¶43.

TCL's construction also incorrectly provides that the software services component "allows" applications to provide services to a user. The only use of the term "allow" in the specification refers to whether applications are "allowed" access to a requested service. '510 patent at 10:7-10 ("Each access record 318 includes the ID tags 320 of the non-native applications 250 that are **allowed** access to the particular native platform service . . ."). The claim language is clear—the decision entity decides whether applications are "allowed" access to the platform's services, not the software services component. *See* Exhibit 1 at ¶44. Defendant's failure to appreciate the context of the claim language results in an improper construction that will confuse the jury rather than help it. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed.

Cir. 2005) (“[T]he context in which a term is used in the asserted claim can be highly instructive.”).

c. “interface component”

Ericsson’s Proposal	TCL’s Proposal
plain and ordinary meaning, no construction necessary	a software component that isolates the software services component from the applications
Claims 1-5 and 7-11 of the ’510 patent.	

The term “interface component” should be given its plain and ordinary meaning. The claims provide that the system include an interface component “having at least one interface for providing access to the software services component for enabling application domain software to be installed, loaded, and run in the platform.” This is consistent with the description of the interface component in the abstract, summary of the invention, and the specification. TCL improperly attempts to impose an additional limitation, that the interface component isolates the software services component from the applications.

A person of ordinary skill in the art reading the term “interface component” in the context of the claim would not understand that term to require isolating the software services component from the applications. *See* Exhibit 1 at ¶¶45-47. The ’510 patent repeatedly describes the interface component as it is claimed in claims 1 and 11, without the requirement that the interface component isolate the software services component from the applications. The abstract provides that the interface component is a component “having at least one interface for providing access to the software services component for enabling application domain software to be installed, loaded, and run in the platform.” ’510 Patent at Abstract. This language is identical to the language in the claims, and like the claims, the abstract does not require that the interface component “isolate the software services component from the application.” The interface component is described three more times in the summary of the invention using the exact same

language, and each time, the specification makes no mention of isolating the software services component from the applications. '510 Patent at 2:49-52; 2:67-3:3; 3:10-13.

TCL's proposed construction improperly includes an additional limitation that is part of an exemplary embodiment:

The interface component 26 includes a middleware services layer **that includes at least one application programming interface (API)** for installing, loading, and running one or more applications 14 in mobile terminal platform assembly 12, **that isolates the mobile terminal platform** assembly 12 from the applications 14 using the assembly 12 via the interfaces, **and that provides various other services** for the applications 14.

Id. at 4:33-41 (emphasis added); *See* Exhibit 1 at ¶47. This embodiment provides that the interface component includes a middleware services layer that (1) includes an API for installing, loading, and running applications, (2) isolates the platform from the applications, and (3) provides various other services. Importantly, the inventor specifically claimed the first item in this list and chose not to claim items 2 and 3. *See id.* at claim 1 (“the interface component having at least one interface for providing access to the software services component for enabling application domain software to be installed, loaded, and run in the platform.”). TCL, ignoring the abstract, summary of invention, the claim language, and the third item on this list, demands that “interface component” be construed to also require isolating the platform from the applications. The inventor could have so limited the claim; he chose not to do so. *Williamson v. Citrix Online, LLC*, 2015 U.S. App. LEXIS 10082, at *12 (Fed. Cir. June 16, 2015) (“[I]t is the *claims*, not the written description, which define the scope of the patent right.”).

d. “interception module for receiving a request from the requesting application domain software to access the software services component”

Ericsson's Proposal	TCL's Proposal
plain and ordinary meaning, no construction necessary	software invoked to receive a request to access the software services component from

	requesting application domain software and pass the request to the decision entity
Claims 1, 10, and 11 of the '510 patent.	

The term “interception module for receiving a request from the requesting application domain software to access the software services component” should be given its plain and ordinary meaning. *See* Exhibit 1 at ¶48. Notably, the claim language requires, in part, “receiving a request from the requesting application domain software to access the software services component.” TCL’s construction uses this exact same language, but rearranges the terms: “receive a request to access the software services component from the application domain software.” Thus, the only words construed by TCL’s proposed construction are “interception module for” TCL inappropriately imports two new limitations in its construction of these three words: that the interception module (1) be “invoked” to receive a request, and (2) pass the request to a decision entity.

First, TCL’s requirement that the interception module “pass the request to the decision entity” is not supported by the claim language and reads out one of the preferred embodiments. The claim specifies that the interception module receive a request, but it makes no mention of passing this request to another entity. Further, the specification describes an embodiment in which the IM does not pass the received request to the security access manager, but rather makes a decision locally. ’510 patent at 8:50-51 (“Instead of sending a permission request with the ID tag from the IM to the SAM, the IM makes a decision locally.”). ’510 patent at 8:50-51. As this Court is well aware, “[a] claim interpretation that excludes a preferred embodiment from the scope of the claim is rarely, if ever, correct.” *See Globetrotter Software, Inc. v. Elan Computer Group, Inc.*, 362 F.3d 1367, 1381 (Fed. Cir. 2004). For this reason, a person of ordinary skill in

the art would understand the plain meaning of this term and would not understand it to require passing a request to the decision entity. *See* Exhibit 1 at ¶50.

TCL’s requirement that the interception module be “invoked” similarly finds no support in the claim language or specification. The claim is silent as to whether receiving a request at the interception module requires invoking software, and thus allows implementations that either do or do not “invoke” the interception module. A person of ordinary skill in the art understands that the claimed interception module can receive, or intercept, a request without being “invoked.” *See* Exhibit 1 at ¶51. Rather than being inactive and waiting to be invoked, the interception module can run continuously waiting for requests. *Id.* Indeed, the specification provides that the interception module “intercepts” requests from the applications. *See, e.g.*, ’510 patent at 8:3-5 (“At step 282, the IM 223 intercepts the service request, which includes an ID tag of the requesting non-native application 250.”). Further, the specification includes an embodiment that provides that the application “invoke” a request but does not similarly require that the interception module be “invoked” to intercept that request. *Id.* at 8:47-50 (“As shown at steps 280 and 282, the non-native application 250 invokes a service request and the service request is intercepted, along with an ID tag, at the IM 223.”).

e. “identification of the requesting application domain software”

Ericsson’s Proposal	TCL’s Proposal
plain and ordinary meaning, no construction necessary	any information indicative of an application that requests access to a software services component
Claim 2 of the ’510 patent.	

A person of ordinary skill in the art would understand the term “identification of the requesting application domain software” to have its plain and ordinary meaning. *See* Exhibit 1 at ¶52. Notably, TCL agrees that the term “requesting application domain software” does not

require a construction, as TCL did not propose this term for construction where it first appears in claim 1. The term “identification of” is similarly clear and unambiguous; the jury is perfectly capable of understanding what it means to “identify” a requesting application.

TCL seeks to replace the term “identification” with “any information indicative of.” TCL’s construction would lead to the absurd result that, for example, information indicating that a requesting application domain software is written in a particular programming language or of a certain size (both pieces of information indicative of an application) would satisfy this limitation even if that information does not identify the application making the request. A person of ordinary skill in the art would not understand such information to be an “identification” of the requesting application domain software. Further, TCL’s construction finds no support in the specification. An example of the “identification” discussed in the patent is a “tag” that identifies which application is requesting access. *See* ’510 patent at 8:3-5 (“At step 282, the IM 223 intercepts the service request, which includes an ID tag of the requesting non-native application 250.”); *see also id.* at 10:12-15. Thus, a person of ordinary skill in the art would not understand “identification” of a requesting application domain software to encompass “any information indicative of” a requesting application domain software. *See* Exhibit 1 at ¶53.

TCL’s proposed construction also incorrectly provides that the identification be of “an” application that makes a request, while the claim requires an identification of “the” requesting application domain software required by claim 1.

f. “decision cache”

Ericsson’s Proposal	TCL’s Proposal
plain and ordinary meaning, no construction necessary	cache storing decisions associated with past service requests
Claim 4 of the ’510 patent.	

The term “decision cache” requires no construction—its plain and ordinary meaning should be adopted.² *See* Exhibit 1 at ¶55. Defendant’s construction, which overcomplicates a simple term in an attempt to inject a limitation from the specification, should be rejected.

The term “decision cache” appears in dependent claim 4, which reads:

“4. The system according to claim 1, wherein the security access manager comprises a ***decision cache*** for maintaining a record of requests by application domain software for determining if a permission decision has previously been granted to the requesting application domain software.”

’510 Patent at claim 4 (emphasis added).

Defendant’s construction is an obvious attempt to construe not only the term at issue, “decision cache,” but rather the entirety of claim 4, which addresses decisions associated with past service requests. Defendant’s approach is improper, as it is the term at issue that should be construed. *Phillips*, 415 F.3d at 1312-19 (demonstrating that the focus of the claim construction inquiry is centered on construing the meaning of the specific claim term at issue). The remainder of the claim language, which provides context for the term being construed, can be “highly instructive,” but that does not mean that such language should be conflated with the term itself. *Id.* at 1314. Defendant’s construction improperly conflates the term at issue with the remainder of the claim, and should be rejected.

A person of ordinary skill in the art would understand that the claim already explains the nature of the records that are stored in the decision cache. *See* Exhibit 1 at ¶56. TCL’s construction, if only applied to the term decision cache, reads as follows: “a [cache storing decisions associated with past service requests] for maintaining a record of requests by application domain software for determining if a permission decision has previously been

² TCL’s filings before the patent office also support plain and ordinary meaning. TCL recently filed two petitions for *inter partes* review against claim 4 of the ‘510 Patent. In those petitions, TCL was required under Patent Office rules to identify “[h]ow the challenged claim is to be construed.” 37 CFR § 42.104(b)(3). In both petitions, TCL did not argue for a different construction for this term beyond its plain and ordinary meaning.

granted to the requesting application domain software.” Under TCL’s proposal, both the terms “decision cache” and the language that follows, “maintaining a record of requests,” require storing records of service requests. And though these records are described using different language, the difference between the records, if any, is unsupported by the claim language. *See Sulzer Textil A.G. v. Picanol N.V.*, 358 F.3d 1356, 1366 (Fed. Cir. 2004) (claim construction should clarify issues for the jury, not create confusion); *Embrex, Inc. v. Serv. Eng’g Corp.*, 216 F.3d 1343, 1347 (Fed. Cir. 2000) (the purpose of claim construction is to help the jury understand the meaning and scope of the claims); *Alexa, Inc. v. Best Buy Co.*, 2012 U.S. Dist. LEXIS 49511, at *22 (E.D. Tex. Apr. 9, 2012) (“[W]here additional language may be unduly limiting, confusing, or redundant, it is in a court’s power to determine that no construction is necessary.”).

g. “a cache with the rules and policies of the decision entity”

Ericsson’s Proposal	TCL’s Proposal
plain and ordinary meaning, no construction necessary	a cache for storing permissions also stored at the decision entity
Claim 11 of the ’510 patent.	

The term “a cache with the rules and policies of the decision entity” should be given its plain and ordinary meaning.³ Indeed, a person of ordinary skill in the art would understand that the claim language already explains the nature of what is stored in the cache and TCL’s proposed construction does not construe the term “cache.” *See* Exhibit 1 at ¶57.

Further, Defendant’s construction includes the phrase “also stored,” which necessarily distinguishes and separates “a cache” from the “decision entity.” *See* Exhibit 1 at ¶58. Claim 11—where the term at issue can be found—does not make such a distinction, covering an

³ TCL’s filings before the patent office also support plain and ordinary meaning. As was the case with decision cache, TCL did not propose a construction for this term in its petition for *inter partes* review against claim 11 of the ’510 Patent.

embodiment in which the interception module (which includes the cache in claim 11) can also be the decision entity. *See* '510 patent at 8:45-63 (“Instead of sending a permission request with the ID tag from the IM 223 to the SAM 518, the IM 223 makes a decision locally.”). Because Defendant’s construction would exclude a disclosed embodiment, it should be rejected. *See Broadcom v. Emulex Corp.*, 732 F.3d 1325, 1333 (Fed. Cir. 2013) (“This court has clarified that an interpretation which ‘excludes a [disclosed] embodiment from the scope of the claim is rarely, if ever, correct.’”).

III. DISPUTED CLAIM TERMS FOR THE '052 PATENT

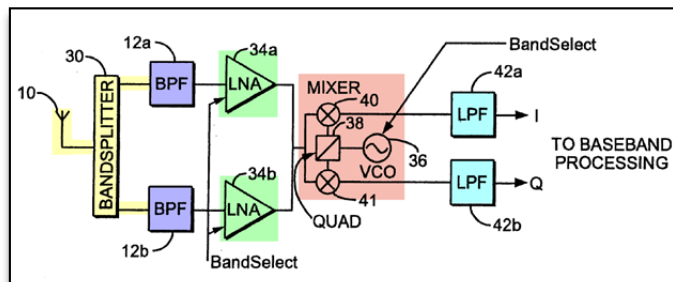
a. Overview of the Technology

The '052 Patent is directed to a transceiver for use in cellular and WiFi applications that is capable of demodulating received communication signals. More specifically, as explained in Ericsson’s technology tutorial, the '052 Patent utilizes a “direct conversion” circuitry configuration to demodulate received communication signals over multiple frequency bands without using an “intermediate frequency.” An exemplary configuration of one embodiment of the '052 Patent’s direct conversion receiver is shown below with accompanying references to claim 13:

13. A method for receiving a communication signal, comprising the steps of:

- receiving a communication signal in any one of a plurality of frequency bands, the communication signal having a bandwidth;
- band-pass filtering the received communication signal;
- amplifying the band-pass filtered signal;
- mixing the band-pass filtered signal with in-phase and quadrature oscillator signals to generate an in-phase and a quadrature received signal; and
- low pass filtering the in-phase received signal and the quadrature received signal in a low pass in-phase filter and a low pass quadrature filter, respectively,

wherein direct conversion is used for converting all received communication signals in any one of the plurality of frequency bands.



(highlighting added). The claimed direct conversion process offers significant improvements over the prior art in terms of both performance and cost savings. As explained in the '052 Patent, “[b]y providing for a relatively low number of frequency conversion operations, each of which results in a frequency within the frequency range of the bandwidth of the received signals (*i.e.*, direct conversion), significant signal processing advantages can be achieved.” ’052 Patent at 5:20-23.

b. “receiving a communication signal in any one of a plurality of frequency bands”

Ericsson’s Proposal	TCL’s Proposal
plain and ordinary meaning, no construction necessary	receiving a communication signal in a frequency band selectable among multiple frequency bands
Claims 13, 15, 16, and 18 of the ’052 patent.	

The term “receiving a communication signal in any one of a plurality of frequency bands” should be given its plain meaning. TCL’s attempt to append a “selectable” requirement onto this limitation is unnecessary in the context of the claim language and the specification.

The ordering of the limitations in claim 13 indicates that the “receiving” step need not contain the “selectable” requirement sought by TCL. In the first step (annotated in yellow in the figure provided above), claim 13 recites: receiving a communication signal in any one of a plurality of frequency bands.” In the second step (annotated in purple in the figure provided above), claim 13 recites “band-pass filtering the received communication signal.” As explained in the ’052 Patent, band-pass filters are “frequency (band) specific” and capable of “filtering communication signals in each of the plurality of frequency bands.” *See* ’052 Patent at 2:16-18, 3:3-5. In other words, a band-pass filter will pass through communication signals in the desired frequency band, but will attenuate (*i.e.*, block) all communication signals outside of the desired band. Because claim 13 requires “band-pass filtering the received communication signal,” one of

ordinary skill in the art would have understood that the “receiving” limitation need not include a “selectable” requirement.

This reading of the claims is consistent with the understanding of one having skill in the art. *See* Exhibit 2 at ¶¶32-34. As explained by Dr. Akl, one of ordinary skill in the art would have understood a “band-pass” filter to mean “a filter that allows passage of a desired range of frequencies and attenuates frequencies outside the desired range.” *See* Exhibit 2 at ¶34 (citing IEEE Standard Dictionary of Electrical and Electronics Terms, Sixth Edition, IEEE Std. 1996). Given that the band-pass filter is responsible for filtering out all but the desired frequency band, it is unnecessary to inject TCL’s “selectable” requirement into the “receiving” limitation of claim 13.

c. “wherein direct conversion is used for converting all received communication signals in any one of the plurality of frequency bands”

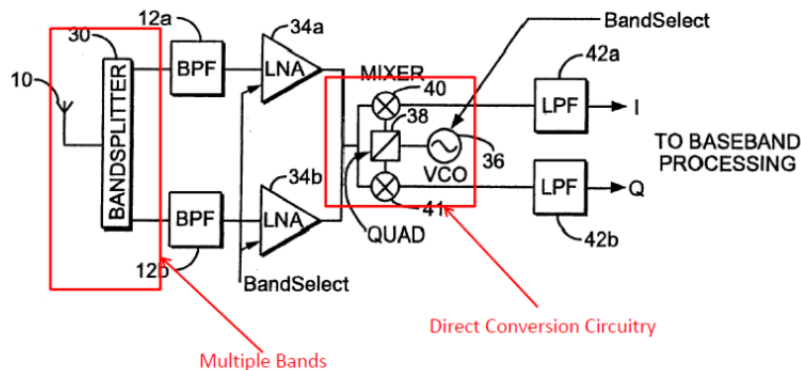
Ericsson’s Proposal	TCL’s Proposal
plain and ordinary meaning, no construction necessary	wherein direct conversion is used for converting all received communications signals in at least two frequency bands
Claims 13, 15, 16, and 18 of the ’052 patent.	

The term “wherein direct conversion is used for converting all received communication signals in any one of the plurality of frequency bands” should be given its plain meaning.⁴ TCL’s proposed construction is simply incorrect in that it replaces the express language of the claims (“converting all received communication signals in *any one of the plurality* of frequency bands”) with terms having an entirely different meaning (“converting all received communication signals *in at least two* frequency bands.”). Nothing in the intrinsic or extrinsic evidence supports such a deviation from the plain language of the claims.

⁴ TCL’s filings before the patent office also support plain and ordinary meaning. TCL recently filed two petitions for *inter partes* review against the ’052 Patent and did not argue for a different construction for this term beyond its plain and ordinary meaning in either petition.

Beginning with the title (“multiple-mode direct conversion receiver”) and the Abstract (“A multiple-mode receiver incorporating direct conversion ... allowing receiver hardware components to be re-used rather than replicated for each band”), the ’052 Patent repeatedly reaffirms that direct conversion is used for converting all received signals in any one of a plurality of frequency bands. Figure 3 shows a multiple mode direct conversion receiver that contains multiple frequency bands and utilizes direct conversion circuitry to convert all received communication signals in any one of the plurality of frequency bands:

FIG. 3



The specification makes clear that the direct conversion circuitry is capable of processing signals in “all of the frequency bands which the receiver is capable of receiving.” See ’052 Patent at 4:16-20 (“In this embodiment, the VCO 36 should have a relatively large bandwidth, sufficient to include all of the received frequency bands which the receiver is capable of receiving. Alternatively, the VCO 36 can be switchable between multiple oscillation frequencies.”). Given the clarity of the claim language and the corresponding support in the specification, there is no reason to deviate from the plain and ordinary construction of this term. See *TomTom, Inc.*, 2015 U.S. App. LEXIS 10328, at *26 (“The starting point for any claim construction must be the claims themselves.”).

IV. DISPUTED CLAIM TERMS FOR THE '310 PATENT

a. Overview of the Technology

The '310 patent teaches a portable wireless communications device that includes in its read-only memory ("ROM") an interpreter and a control program written in an interpretive language, such as Java. Computer programming languages fall within one of two categories: compiled programming languages or interpreted programming languages. Compiled languages are written for a particular processor and then compiled and stored in a machine-readable code. Interpreted languages are written in a platform-independent language and then compiled and stored in an intermediary code, e.g., Java Byte Code, which is then interpreted by an interpreter. Interpreted languages require more processing power, but enable a computer programmer to write the same code for use on multiple processors.

In the prior art, interpreters were downloaded with the desired interpretive source code and stored in random-access memory ("RAM") and not used for the control programs in a mobile phone. '310 patent at 1:52-2:10. The control program is the program that controls "the interactions between the human user, the MMI, the transmitter, the receiver and the wireless network." *Id.* at 1:19-23. The inventors recognized that storing an interpreter in the ROM of wireless communications devices enables developers to write a single control program that can be read by many different wireless communications devices.

b. "control program"

Ericsson's Proposal	TCL's Proposal
plain and ordinary meaning, no construction necessary;	program capable of handling layer-3 signaling messages exchanged between the network and the portable wireless communications device and capable of controlling the radio functions of the device in response to the layer-3 signaling messages
if construction is necessary, "a program running on a control processor"	

Claims 1, 13, and 18 of the '310 patent.
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As explained by Dr. Jones, one of ordinary skill in the art would have understood the plain and ordinary meaning of “control program” to simply be “a program running on a control processor.” The claim language already provides that the control program controls “the operation of said transmitter and said receiver in response to said control messages,” and the parties have agreed that the term “control message” means “layer-3 signaling messages exchanged between the network and the network station.” Thus, a person of ordinary skill in the art would understand that the claim language defines the relationship of the control program to the control messages. *See* Exhibit 1 at ¶¶59-60.

TCL cannot demonstrate that this well-understood term was redefined in the specification. Unless the patentee “demonstrate[s] intent to deviate from the ordinary and accustomed meaning of a claim term by including in the specification **expressions of manifest exclusion or restriction**, representing **a clear disavowal** of claim scope,” the term should be construed to capture its full scope. *Aventis Pharma S.A. v. Hospira, Inc.*, 675 F.3d 1324, 1330 (Fed. Cir. 2012) (internal citations omitted) (emphasis added). Courts indulge “a **heavy presumption** that a claim term carries its ordinary and customary meaning.” *Starhome GmbH v. AT&T Mobility LLC*, 743 F.3d 849, 857 (Fed. Cir. 2014) (internal citations omitted) (emphasis added). Moreover, the Federal Circuit has held that “it is not enough that the only embodiments, or all of the embodiments, contain a particular limitation to limit a claim term beyond its ordinary meaning.” *Aventis Pharma*, 675 F.3d at 1330 (internal citations omitted).

TCL derives its construction from an excerpt in the summary of the invention, which provides that the invention utilizes “a control program for handling layer-3 signaling exchanged between the network and the mobile phone and for controlling **the behavior of the mobile**

phone in response to such messages.” ’310 patent at 3:20-25 (emphasis added). TCL’s adopts this language almost verbatim, but changes it to reflect that the control program controls the “**radio functions of the device**” rather than “**the behavior of the mobile phone.**”⁵ The specification elsewhere provides that the control program control “interactions between the human user, the MMI, the transmitter, the receiver and the wireless network.” *Id.* at 1:20-23. TCL cannot cobble together random parts of the specification to redefine a well-understood term. TCL must point to a manifest intent on the part of the inventor to change the well-understood meaning of the term “control program.” TCL cannot do so and thus cannot overcome the “heavy presumption” that this term should be given its plain and ordinary meaning.

c. “a control program in [JAVA language]/[an interpretive programming language]”

Ericsson’s Proposal	TCL’s Proposal
a program substantially written in JAVA code running on a control processor	a program capable of handling layer-3 signaling messages exchanged between the network and the portable wireless communications device and capable of controlling the behavior of the portable wireless communications device in response to the layer-3 signaling messages, in the form of Java source code or Java bytecodes
AND	AND
a program substantially written in code expressed in a form that can be recognized and processed by an interpreter running on a control processor	program capable of handling layer-3 signaling messages exchanged between the network and the portable wireless communications device and capable of controlling the radio functions of the device in response to the layer-3 signaling messages, in the form of source code in an interpretive language or bytecodes to be interpreted
Claims 1 and 13 of the ’310 patent.	

⁵ Oddly, TCL’s construction for “control program in Java language” provides that the control program control “the behavior of the portable wireless communications device,” not “the behavior of the mobile phone.” *See* section IV.c below.

TCL's construction construes two parts of the disputed term: (1) "control program," and (2) "in [JAVA language]/[an interpretive programming language]."

First, TCL improperly provides two different constructions of "control program." TCL's construction for "control program" in claim 1 requires that the control program be "capable of controlling the behavior of the portable wireless communications device" TCL's construction for "control program" in claim 13 requires that the control program "be capable of controlling the radio functions of the device" A person of ordinary skill in the art would not understand the term "control program" as it appears in claims 1 and 13 to have different meanings. *See* Exhibit 1 at ¶64. For the reasons discussed in section IV.b above, a person of ordinary skill in the art understands that this term is used in the '310 patent consistent with its plain meaning: "a program running on a control processor."

TCL's construction also provides that "in Java language" should be construed as "in the form of Java source code or Java bytecodes," and "in an interpretive language" be construed as "in an interpretive language or bytecodes to be interpreted." TCL's construction is a thinly-veiled attempt at a non-infringement argument. In practice, programs written in an interpretive language, such as Java, are not completely written in that language; they often include some native machine code. *See* Exhibit 1 at ¶65. For example, virtually all Java programs use an API to call upon functionality embodied in libraries of commonly used computer routines. The code that lies underneath that API is often not Java code. *Id.* The specification reflects this common understanding, as is seen in the following excerpt: "[i]n the invention, **a substantial part of the software control program for processor 117 is written in JAVA source code and stored as JAVA bytecodes 300 in ROM instead of being compiled to and stored in the form of native machine code.**" '310 Patent at 5:67-6:8 (emphasis added); *see also* Exhibit 1 at ¶65. A person of ordinary

skill in the art understands that a program written substantially in JAVA or any other interpretive language is still “written in [that interpretive language],” as required by the claims. *Id.* at ¶¶62-65. TCL cannot point to any language in the claims or the specification limiting the invention to control programs written completely in Java code.

V. DISPUTED CLAIM TERMS FOR THE '931 PATENT

a. Overview of the Technology

The '931 patent teaches a radiotelephone that includes a contact-sensitive transducer and a controller (1) that is responsive to moving contact, e.g., a user swiping his finger across the contact-sensitive transducer, and (2) has a first mode wherein the controller is responsive to contact with the contact-sensitive transducer and a second mode wherein the controller is not responsive to contact. These functions improve the user experience by allowing the user to scroll down through rows of information with the swipe of a finger and turn the touch sensitive screen off to prevent inadvertent user inputs.

b. Ericsson: “output signal that characterizes . . . contact”

Ericsson's Proposal	TCL's Proposal
plain and ordinary meaning, no construction necessary;	an electrical signal that describes the character or qualities of the . . . contact with the contact-sensitive surface of the contact sensitive transducer
Claims 16, 33, 58, and 64 of the '931 patent.	

The term “output signal that characterizes . . . contact” should be given its plain and ordinary meaning.⁶ This is a simple term, the construction of which requires “little more than the application of the widely accepted meaning of commonly understood words.” *Phillips*, 415 F.3d

⁶ TCL's filings before the patent office also support plain and ordinary meaning. TCL's four petitions of *inter partes* review against the '931 Patent do not propose that this term be construed.

at 1314. A person of ordinary skill in the art would understand this term to have its plain and ordinary meaning. *See* Exhibit 2 at ¶¶38-39.

TCL’s proposed construction also includes superfluous language requiring the contact to be “with the contact-sensitive surface of the contact sensitive transducer.” The limitation at issue already requires that the signal characterize “contact of an object along the contact-sensitive surface of the contact sensitive transducer.” TCL seeks to insert the phrase “with the contact-sensitive surface of the contact sensitive transducer” between the words “contact” and “of” in this limitation. TCL’s construction, read in context, requires the signal to characterize “contact [with the contact-sensitive surface of the contact sensitive transducer] of an object along the contact-sensitive surface of the contact sensitive transducer.” TCL’s construction is unhelpful and will serve only to confuse the jury. This term should be given its plain and ordinary meaning.

VI. DISPUTED CLAIM TERMS FOR THE ’815 PATENT

a. Overview of the Technology

The inventions described in the ’815 Patent are directed to techniques for more efficiently estimating the location of a mobile terminal, such as a cellular telephone, in order to conserve resources and battery life. ’815 Patent at 4:10-12. The ’815 Patent utilizes a variable “quality of service” parameter that indicates a desired quality of service for computing position estimates. Once the “quality of service” parameter is determined, the mobile phone looks to location information already existing in the phone to determine whether it is sufficient to meet the “quality of service” requirements. If the data is sufficient to compute an estimate meeting the quality of service, then there is no need to obtain additional aiding data from other sources. If

insufficient, additional location data may be obtained from a remote source on an on-demand basis. Utilizing these techniques conserves resources and the battery life of mobile phones.

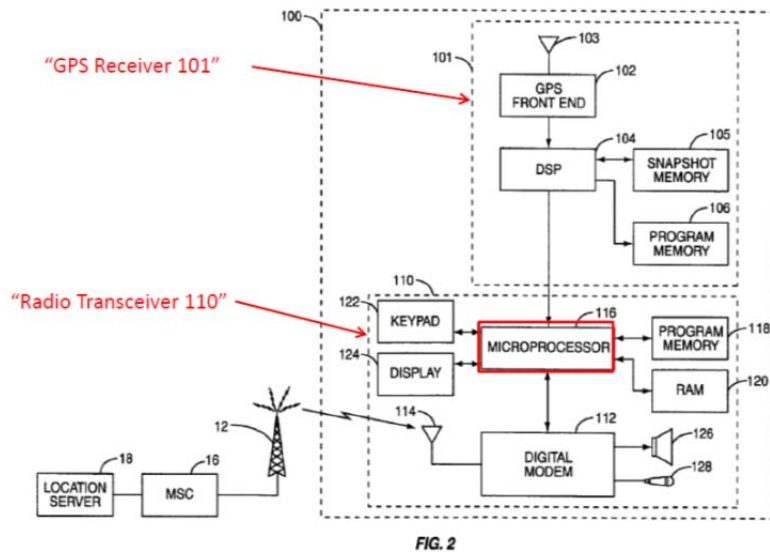
b. “compute/computing said current position of said mobile terminal”

Ericsson’s Proposal	TCL’s Proposal
plain and ordinary meaning, no construction necessary	determine/determining the current position of the mobile terminal using GPS calculations
Claims 11-12 and 15-16 of the ’815 patent.	

The terms “compute said current position of said mobile terminal” and “computing said current position of said mobile terminal” should be given their plain and ordinary meaning. TCL seeks to narrowly limit these terms to only include position estimates derived from “GPS calculations.” However, the specification contradicts this narrow reading, expressly disclosing position estimates calculated based on cellular network positioning information such as “cell position information” and “the cell identities of requesting mobile terminal” to estimate the position of a mobile device. ’815 Patent at 3:49-55 (“Furthermore, the location server 18 may have access, either locally or through a network, to a database 22 containing cell position information, which it delivers as aiding data based on the cell identities of the requesting mobile terminal 100. Cell location can be used to provide an approximate location of a mobile terminal.”). TCL’s proposed construction would therefore improperly read out the “cellular” embodiments of the invention. *See* Exhibit 1 at ¶¶29-32; *Accent Packaging, Inc. v. Leggatt & Platt, Inc.* 770 F.3d 1318, 1326 (Fed. Cir. 2013) (“a claim interpretation that excludes a preferred embodiment from the scope of the claim is rarely, if ever, correct.”) (citations omitted).

The first sentence of the specification makes clear that the invention is not limited to GPS positioning. Rather, it extends to “mobile terminals equipped with a positioning receiver, such as a GPS receiver.” *See* ’815 Patent at 1:6-7. Given that GPS is just one example of the broader term “positioning receiver,” it would make no sense to limit the claims to only position

computations that are determined using GPS calculations. In fact, the patentee disclosed in one exemplary embodiment a “microprocessor 116” that could compute position estimates instead of “GPS receiver 101.” ’815 Patent at 7:10-13 (“Once the GPS receiver 101 *or* microprocessor 116 has received the new aiding data, it proceeds to compute a final position/time solution that is expected to meet QoS requirements.”).



As shown in Figure 2, “microprocessor 116” is a component of “radio transceiver 110” and is capable of connecting to a cellular network via “antenna 114.” In this embodiment, the calculations performed by “microprocessor 116” are not performed on the “GPS Receiver 101” component of the mobile device.

Contrary to TCL’s improper attempt to limit this term to an exemplary embodiment (*e.g.*, GPS-only), one of ordinary skill would understand that this term in the context of the specification would extend to both GPS-based and network-based positioning computations. *See* Exhibit 1 at ¶29. TCL’s proposed construction limiting the terms “compute said current position of said mobile terminal” and “computing said current position of said mobile terminal” to only

those derived from GPS calculations should be rejected as excluding preferred embodiments from the scope of the claims.

c. “positioning receiver”

Ericsson’s Proposal	TCL’s Proposal
plain and ordinary meaning, no construction necessary	GPS receiver
Claims 17-19 of the ’815 patent.	

The term “positioning receiver” should be given its plain and ordinary meaning.⁷ TCL’s attempt to limit this term to “GPS receiver” is contrary to the specification and the understanding of one of ordinary skill in the art. Indeed, as discussed directly above, in the very first sentence of the specification, the patentee indicated that the term “positioning receiver” is **broader** than the term “GPS receiver.” ’815 Patent at 1:7-12 (“The present invention relates generally to a mobile terminal equipped with a *positioning receiver, such as a GPS receiver . . .*”). Accordingly, a GPS receiver is just one **example** of a type of “positioning receiver.” Use of exemplary language in the specification should not be read to limit broader claim language to particularly disclosed examples. *See Bayer Cropscience AG v. Dow Agrosciences LLC*, 728 F.3d 1324, 1329-30 (Fed. Cir. 2013) (“the use of ‘e.g.’ rather than ‘i.e.’, strongly suggests” that the term is not limited to the particularly disclosed example). Further, the ’815 Patent discloses obtaining position estimates based on “cellular” positioning methods to estimate the position of a mobile terminal based on “cell identities of the requesting mobile terminal.” *See* ’815 Patent at 3:49-56, 5:1-5, Fig. 2; *See also* Exhibit 1 at ¶¶33-34. Again, TCL’s proposed construction should be rejected as excluding preferred embodiments from the scope of the invention.

⁷ TCL’s filings before the patent office also support plain and ordinary meaning. TCL did not identify this claim term as needing construction in its recently filed *inter partes* review petitions.

d. “remote source”

Ericsson’s Proposal	TCL’s Proposal
plain and ordinary meaning, no construction necessary	a device remotely located from the mobile terminal that is the origin and/or place of procurement of aiding data
Claims 1-3, 15, and 17-19 of the ’815 patent.	

The parties dispute the meaning of the term “remote source.” This term, however, is a simple term, the construction of which requires “little more than the application of the widely accepted meaning of commonly understood words.” *Phillips*, 415 F.3d at 1314. “Remote source” is self-defining—a source that is remote. As the Federal Circuit has held, “[t]he patentee is free to choose a broad term and expect to obtain the full scope of its plain and ordinary meaning unless the patentee explicitly redefines the term or disavows its full scope.” *Thorner v. Sony Computer Entm’t Am. LLC*, 669 F.3d 1362, 1367 (Fed. Cir. 2012). Because Defendants can point to no such redefining or disavow, “remote source” should not be altered from its plain and ordinary meaning. This approach is supported by the fact that when the patentee wanted to specify a specific remote source, it was explicitly identified. *See, e.g.*, ’815 patent at claim 18, claim 19.

e. “quality of service”

Ericsson’s Proposal	TCL’s Proposal
plain and ordinary meaning, no construction necessary; if construction is necessary, “a level of performance”	an indication of grade or level of performance associated with a computed position estimates
Claims 1-3, 8-12, and 15-19 of the ’815 patent.	

The term “quality of service” should be given its plain meaning. If construction is necessary the term should be construed as “a level of performance.” TCL’s proposed construction injects needless ambiguity into the term “quality of service” by tying it to “an

indication of grade or level of performance *associated with a computed* position estimate.” This is flawed for two reasons. *First*, the term “quality of service” is used in claim 1 in the context of the broader limitation “determining a desired quality of service.” This step has nothing to do with computing position estimates, so it would be improper to construe it as being “associated with a computed position estimate[]” as TCL suggests. *See* Exhibit 1 at ¶37. *Second*, TCL’s proposed construction defines “quality of service” in terms of a *past* estimate that has already been computed, but “quality of service” is used in claim 1 in the context of making a *future* location estimate. *See also* Exhibit 1 at ¶38. Given these flaws, the term “quality of service” should be construed to have its plain and ordinary meaning. *See* Exhibit 1 at ¶39.

f. “requesting application”

Ericsson’s Proposal	TCL’s Proposal
plain and ordinary meaning, no construction necessary	a software program running on the mobile terminal or external to the mobile terminal that causes an estimate of current position to be calculated
Claim 8 of the ’815 patent.	

This term should be given its plain and ordinary meaning. The phrase “requesting application” comprises two everyday English words that are readily understandable by a jury without further construction. *See Mirror Worlds, LLC v. Apple, Inc.*, 742 F. Supp. 2d 875, 885 (E.D. Tex. Aug. 11, 2010). TCL’s proposed construction adds the phrase “causes an estimate of current position to be calculated.” This proposal improperly imports the limitation of actually calculating an estimate of current position. The step of actually calculating this estimate is not found anywhere in either claim 1 or in claim 8. ’815 Patent at claim 1, claim 8 (reciting “receiving,” “determining,” “determining,” and “obtaining” steps, but not reciting an actual computing of an estimate step). It is not until dependent claims 11 through 16 that the patentee claims the actual determining of a position.

Moreover, TCL's proposed construction redefines the term "requesting" in "requesting application" to mean "causes an estimate." This is plainly incorrect, particularly when viewed in the context of the specification which indicates that a "requesting application" is simply an application that makes a request for a location update. *See* Exhibit 1 at ¶40; *see also* '815 Patent at 5:26-29 ("According to the present invention, a positioning application 26 running either within the mobile terminal 100 itself or in the mobile communication network 10 requests a position update from the mobile terminal."). In accord with the claim language and the specification, the actual "cause" of the estimate could be based on other things than the requesting application. *See* Exhibit 1 at ¶41.

VII. CONCLUSION

For the foregoing reasons, Ericsson respectfully requests that the Court either adopt Ericsson's proposed constructions or—as appropriate depending on the issue—hold that the disputed term will have its plain and ordinary meaning, and thus needs no construction.

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CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the above and foregoing document has been served on all counsel of record via the Court's ECF system on August 14, 2015.

/s/ Theodore Stevenson, III

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